

CLAIMS

1. A manufacturing method of a master disc for an optical disc, comprising:

5 a film forming step of forming an inorganic resist layer made of an incomplete oxide of a transition metal as a film onto a substrate; and

a step of forming resist patterns including concave/convex shapes by exposing and developing said inorganic resist layer,

10 wherein in said film forming step, oxygen concentration of said inorganic resist layer is made different in its thickness direction.

2. A manufacturing method of the master disc for the optical disc according to claim 1, wherein said oxygen concentration is decreased toward the surface of said substrate from the surface of said inorganic resist layer.

15 3. A manufacturing method of the master disc for the optical disc according to claim 1, wherein said oxygen concentration is increased toward the surface of said substrate from the surface of said inorganic resist layer.

20 4. A manufacturing method of the master disc for the optical disc according to claim 1, wherein

25 a single element or alloy of the transition metal, or an oxide of them is used as a target material, said inorganic resist layer is formed as a film onto the substrate by a sputtering method using oxygen or nitrogen as a reactive gas, and

the oxygen concentration of said inorganic resist layer is made different in the thickness direction by changing at least either a film forming power or a reactive gas ratio.

5. A manufacturing method of the master disc for the optical disc according to claim 4, wherein one of tungsten, molybdenum, tungsten molybdenum, and their oxide is used as said target material.

10. A manufacturing method of the master disc for the optical disc according to claim 1, wherein the concave/convex shapes of different depths are formed by changing an exposing power to said inorganic resist layer.

15. A master disc for an optical disc which is used when the optical disc having concave/convex shapes is manufactured, wherein

20. a substrate is coated with an inorganic resist layer in which oxygen concentration is made different in its thickness direction and which is made of an incomplete oxide of a transition metal, and the concave/convex shapes are formed in said inorganic resist layer.

25. A master disc for the optical disc according to claim 7, wherein said oxygen concentration is decreased toward the surface of said substrate from the surface of said inorganic resist layer.

9. A master disc for the optical disc according to claim 7, wherein said oxygen concentration is increased toward the surface of said substrate from the surface of

said inorganic resist layer.

10. A master disc for the optical disc according to  
claim 7, wherein the concave/convex shapes of different  
depths are formed in said inorganic resist layer.